

## THE SOCIO-DEMOGRAPHIC DETERMINANTS OF SELF-RATED HAPPINESS: THE CASE OF PENANG, MALAYSIA\*

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### *Abstract*

In view of the importance of happiness, the present study aims to investigate the socio-demographic determinants of happiness among Penang (Malaysia) adults. An ordered probit model and a primary survey data with a total of 398 observations are used in this study. The results reveal that ethnicity, marital status and education are statistically significant in determining individuals' happiness, whereas income, gender, age, employment status and presence of chronic diseases are not statistically significant in determining individuals' happiness. Based on these observed outcomes, several policy implications are discussed.

*Keywords:* education, happiness, health, income, Malaysia, well-being

*JEL Classification Code:* D60

### I. *Introduction*

The pursuit of happiness or well-being is one of the ultimate goals of every human being and it is also regarded as an important objective in every society. Today, many countries devote a great deal of attention to their economic performance. However, Oswald (1997) claimed that people would not necessary feel happier even though the unemployment rate or inflation rate of their country has been significantly reduced. Therefore, an improvement in economic

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performance per se may not be effective in bringing more happiness to society. Since happiness is an important issue worldwide, there appears to be a growing literature that examines the determining factors of happiness. Previous researches have suggested that happiness is a stochastic phenomenon and is primarily determined by genetic factors (Lykken and Tellegen, 1996; Lykken, 1999; Lykken and Csikszentmihalyi, 2001). On the other hand, there are also researchers who claimed that happiness is closely associated with environmental factors (Roysamb et al., 2003; Johnson and Krueger, 2006). Furthermore, Norrish and Vella-Brodrick (2008) emphasised that individuals' happiness and well-being can be improved through appropriate interventions. As such, a better understanding of the factors associated with happiness is very important for policymakers to build up a happy society.

The prevalence of suicides in Malaysia is becoming more and more serious recently with an estimated 60 people committing suicides monthly (Wong, 2011). Compared to all the states in Malaysia, Penang is observed to have the second highest suicide rate (18.58% of total suicide cases) which ranks after Selangor but before Perak (Hayati et al., 2008). National Suicide Registry Malaysia (NSRM) also revealed that the suicide rates in Pahang, Terengganu and Sarawak are among the lowest in Malaysia. Studies have consistently found that extreme unhappy feelings is the main factor which causes suicide given that unhappy people are prone to suffer from serious mental stress and other profound psychological problems (Koivumaa-Honkanen et al., 2003; Frank, 2005; Bray and Gunnell, 2006). In view of these serious woes, it is utmost essential to undertake an in-depth investigation on the determinants of happiness in Malaysia with particular attention on Penang which has a very high suicide rate.

Previous studies have often explored the determinants of happiness in the United States (Subramanian et al., 2005; Frank, 2005), Europe (Clark and Oswald, 1994; Oswald, 1997; Theodossiou, 1998; Winkelmann and Winkelmann, 1998; Gredtham and Johannesson, 2001) and Japan (Tokuda and Inoguchi, 2008; Oshio and Kobayashi, 2010), whereas only one study has examined this topic in Malaysia (Howell et al., 2006). However, the study by Howell et al. (2006) only focused on the sample of poor indigenous people (*Orang Asli*) in Malaysia. Besides, the variables that were taken into account in the study were limited to only income, age, education and family size while other important variables such as gender, marital status, health status, and ethnicity were all neglected. As such, the present study attempts to fill this research void in two ways. First, the present study uses a more representative sample of the Malaysian population which consists of various races and income levels of respondents. Second, it includes a more complete socio-demographic variable for analysis.

The rest of this paper is structured as follows. Section II summarises the findings from past empirical literature. The method that is used for this research is described in Section III. Sections IV, V and VI mainly focus on the empirical results, discussion and concluding remarks, respectively.

## II. *Review of Empirical Literature*

The literature shows that the effects of income on happiness are mixed. Prior studies by Oswald (1997), Gredtham and Johannesson (2001), Subramanian et al. (2005), Howell et al. (2006), Tokuda and Inoguchi (2008) and Oshio and Kobayashi (2010) had all found that income was positively correlated with the level of happiness. Kahneman et al. (2006)

established that a moderate increase in individual income could only increase individuals' happiness in the short term. However, Clark and Oswald (1994), Theodossiou (1998) and Winkelmann and Winkelmann (1998) concluded that money could not buy happiness as there was no significant relationship between income and happiness. Frank (2005) found that an increase in income would not cause much change on a population's well-being because people could adapt to changes of quality of life over time.

In terms of education, higher educated individuals were found to have happier feelings than the lower educated individuals (Oswald, 1997; Gredtham and Johannesson, 2001; Subramanian et al., 2005; Tokuda and Inoguchi, 2008). In contrast, Howell et al. (2006) found that education was negatively associated with well-being. Campbell et al. (1976) and Diener et al. (1993) observed that there was no significant relationship between education and well-being and further concluded that the impact on social well-being was attributable to income but not education. This finding was also evidenced by Clark and Oswald (1996), Theodossiou (1998) and Helliwell (2003).

Tokuda and Inoguchi (2008) found that marital status was significantly associated with happiness. Studies by Morawetz et al. (1977), Oswald (1997), Gredtham and Johannesson (2001), Clark and Oswald (2002) and Subramanian et al. (2005) had all observed that married individuals tended to feel happier than the single, divorced and widowed. These outcomes were also shared by Peiro (2006), who explored the effects of socio-economic factors on happiness in 15 different countries.<sup>1</sup>

Previous studies had shown that individuals who perceived their own health as poor were more likely to feel unhappy (Clark and Oswald, 1994; Theodossiou, 1998; Winkelmann and Winkelmann, 1998; Gredtham and Johannesson, 2001; Subramanian et al., 2005; Tokuda and Inoguchi, 2008). Howell et al. (2006) also suggested that there was a negative relationship between illnesses and well-being. This was because poor health could interfere with one's living lifestyle. However, Diener et al. (1993) found that the inverse relationship between health and happiness was very weak given that individuals would be able to adapt to the changes of health conditions overtime.

The impact of age on happiness appeared to be ambiguous. Since individuals would adjust their aims and goals as they grew older, age was not associated with happiness (Diener et al., 1993). Using the population-based survey data of Japan, Oshio and Kobayashi (2010) had consistently found that younger individuals tended to feel happier than their older peers. On one hand, Gredtham and Johannesson (2001) found a U-shape relationship between age and happiness, meaning that those aged 18-34 years and  $\geq 60$  years tended to feel happier than those aged 35-64 years. This U-shape relationship was further evidenced by Frey and Stutzer (2002) and Peiro (2006). On the other hand, Howell et al. (2006) found that age and happiness was inverted U-shape correlated, meaning that individuals' happiness levels would reach its maximum at the age of 50, then decrease afterwards.

Studies by Gredtham and Johannesson (2001), Frey and Stutzer (2002) and Subramanian et al. (2005) revealed that males were associated with a lower likelihood of being happy. This was due to the fact that males were less inclined to share their negative emotions with others as compared to females (Nolen-Hoeksema and Rusting, 1999). Quite the opposite, Clark and

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<sup>1</sup> Among the 15 countries under investigation are Argentina, Australia, Chile, China, Dominican Republic, Finland, Japan, Nigeria, Peru, Russia, Spain, Sweden, Taiwan, the United States and Venezuela.

Oswald (1994) and Theodossiou (1998) found that males tended to feel happier than females. As explained by Umberson et al. (1996), females were likely to face more distress on social relationships that could result in unhappy feelings. However, Easterlin (2003) found that gender was only a minor determinant of happiness.

Studies by Clark and Oswald (1994), Gerlach and Stephan (1996), Winkelmann and Winkelmann (1998) and Gredtham and Johannesson (2001) concluded that being unemployed was highly correlated with unhappy feelings. A likely reason may be due to the financial constraints. On the other hand, it was argued that employed individuals, who tended to allocate very less time for physical exercise and leisure activity, were likely to have poorer well-being (Frank, 2005). However, the study by Peiro (2006) documented that employment status did not possess any significant impacts on happiness.

### III. *Data and Methodology*

#### 1. **Data Source**

Cross-sectional primary survey data was collected based on a non-probability convenient sampling approach. Nevertheless, efforts were made to stratify the sample according to the gender and ethnic composition of Penang state in Malaysia (SERI, 2010). This is to further improve the sample's representativeness. The survey was carried out in various places in Penang such as shopping malls, offices, cafes and residential areas between August and October, 2010. At the end of survey, a total of 415 respondents were canvassed. However, after rejecting those with incomplete information, only the remaining 398 (96%) were retained for final analysis.

During the survey, structured bi-lingual questionnaires (i.e. *Bahasa Malaysia* and English) were distributed to different ethnic background of respondents (i.e. Malays, Chinese, Indians and others) for self-administration. Meanwhile, a brief explanation was provided upon giving out the questionnaires. Targeted respondents were those aged 21 years and above, and who had been staying in Penang for no less than 12 months. In the questionnaires, respondents were asked to self-rate their happiness. Specifically, the question was addressed as "In general, how happy do you feel these days?" with the choices of "Very happy", "Happy", "Unhappy" and "Very unhappy". Meanwhile, the respondents' socio-demographic and health profiles were also recorded.

#### 2. **Econometric Specification**

The present study uses 'self-rated happiness' as the dependent variable. It is measured as categorical and ordinal outcomes with a clear ordering (i.e. unhappy/very unhappy, happy, very happy). As such, an ordered probit model is appropriate to use for explaining the variations of such a variable (McKelvey and Zavoina, 1975; McCullagh, 1980; Moghaddam, 2008). In general, the ordered probit model can be expressed as below:

TABLE 1. DEFINITION OF VARIABLES IN THE STATISTICAL MODEL

Variable name	Definition
<i>Dependent variable:</i>	
Happiness	Individual's happiness (1 = unhappy/ very unhappy; 2 = happy; 3 = very happy)
<i>Independent variables:</i>	
Age	Age in years
Age <sup>2</sup>	Age in square term
Gender	
Male	Being male (1 = yes, 0 = no)
Female*	Being female (1 = yes, 0 = no)
Ethnicity	
Malay	Being Malay (1 = yes, 0 = no)
Chinese	Being Chinese (1 = yes, 0 = no)
Indian/others*	Being Indian/other (1 = yes, 0 = no)
Marital status	
Married	Being married (1 = yes, 0 = no)
Single/divorcé/widow(er)*	Being single/divorcé/widow(er) (1 = yes, 0 = no)
Employment status	
Employed	Being employed (1 = yes, 0 = no)
Unemployed*	Being unemployed (1 = yes, 0 = no)
Income	
Low*	Monthly individual income: RM 0 – RM 999 (1 = yes, 0 = no)
Lower-middle	Monthly individual income: RM 1000 – RM 2999 (1 = yes, 0 = no)
Upper-middle	Monthly individual income: RM 3000 – RM 5999 (1 = yes, 0 = no)
High	Monthly individual income: RM 6000 and above (1 = yes, 0 = no)
Education	
Primary*	Primary school or less as highest level of education (1 = yes, 0 = no)
Some-high	Some high school as highest level of education (1 = yes, 0 = no)
High-school	Completed high school as highest level of education (1 = yes, 0 = no)
College	Some college as highest level of education (1 = yes, 0 = no)
Bachelor	Bachelor degree or higher as highest level of education (1 = yes, 0 = no)
Health condition	
Chronic	Presence of chronic disease (1 = yes, 0 = no)
No-chronic*	Absence of chronic disease (1 = yes, 0 = no)

Note: \* refers to reference group.

$$\begin{aligned}
 \text{Happiness}^* &= X'\beta + e \\
 \text{Happiness} &= 1(\text{unhappy/very unhappy}) && \text{if } [-\infty < \text{Happiness}^* < \mu_1] \\
 \text{Happiness} &= 2(\text{happy}) && \text{if } [\mu_1 < \text{Happiness}^* < \mu_2] \\
 \text{Happiness} &= 3(\text{very happy}) && \text{if } [\mu_2 < \text{Happiness}^* < \infty]
 \end{aligned}
 \tag{1}$$

Happiness\* is a latent variable for happiness,  $X'$  is a transposed vector of the independent variables,  $\beta$  is a matrix of the regression coefficients and  $e$  is the stochastic error term.  $\mu_1$  and  $\mu_2$  are the corresponding thresholds.

### 3. Definition of Variables

Since there is currently a lack of in-depth empirical study on happiness in Malaysia, the

independent variables of the present study are selected closely based on the previous studies that have been conducted elsewhere (e.g. Clark and Oswald, 1994; Oswald, 1997; Theodossiou, 1998; Winkelmann and Winkelmann, 1998; Gredtham and Johannesson, 2001; Subramanian et al., 2005; Tokuda and Inoguchi, 2008; Oshio and Kobayashi, 2010). To sum up, the included independent variables are (i) age; (ii) gender; (iii) ethnicity; (iv) marital status; (v) employment status; (vi) income; (vii) education; and (viii) health condition (see Table 1).

Owing to the different ages of individuals, having different levels of happiness, the respondent's age is thus taken into account as a continuous variable. Besides, the square of age ( $age^2$ ) is also included in order to capture the quadratic relationship between age and happiness. In addition, the respondent's gender is entered as 1 if males and 0 if females.

Considering the study by Swami (2008), who examined the happiness of Malays and found a significant correlation between ethnicity and happiness, the respondent's ethnic group is thus entered into the current model as three categories: Malay, Chinese, Indian/others (reference).<sup>2</sup>

In light of the plausible effect of marital status on happiness, the present study takes into account of the respondent's marital status. A value of 1 is assigned if the respondent is married and 0 if the respondent is single, divorced or widowed. To capture the influence of employment status on happiness, a respondent who is currently being employed is coded as 1, whereas an unemployed (e.g. student, homemaker and retiree) is coded as 0.

Since income is needed to purchase goods and services that could yield utility, the respondent's monthly individual income is segmented into four categories for analysis: low [ $\leq$  RM 999 ( $\leq$  USD 322.26) (reference)], lower-middle [RM 1000 — RM 2999 (USD 322.58 — USD 967.42)], upper-middle [RM 3000 — RM 5999 (USD 967.74 — USD 1935.16)] and high [ $\geq$  RM 6000 ( $\geq$  USD 1935.48)].<sup>3</sup>

The education variable is categorised based on the respondent's highest academic qualification: primary ( $\leq$  6 years of study) (reference), some high school (7 — 10 years of study), completed high school (11 years of study), college (12 — 13 years of study) and bachelor's degree ( $\geq$  14 years of study).

Owing to the fact that a self-assessed health approach lacks reliability, the present study uses self-reported chronic diseases as a more preferred proxy for measuring the respondent's health status. A code of 1 represents those self-report being diagnosed with chronic disease (e.g. hypertension, diabetes, stroke, cancer, kidney disease, etc.) and 0 otherwise. This is in view of the evidence that health may affect one's happiness.

#### 4. Characteristic of Survey Respondents

Of the total sample, 18.34% and 73.62% of the respondents self-perceived to be very happy and to have happy feelings, respectively, whereas, only 8.04% self-perceived to be unhappy/very unhappy. Based on these, one can conclude that the well-being of the population in Penang is not as severe as other Asian well developed countries such as Japan. Reasons that arise include the great job opportunities in Penang where many multinational companies in the manufacturing industry exist (Yeoh, 2011). Furthermore, Penang is also regarded as one of the

<sup>2</sup> Ethnic Indians and those of other ethnicities are combined to represent the ethnic minority in Malaysia.

<sup>3</sup> USD 1.00 = RM 3.10 (approximately as of 24th September 2010)

TABLE 2. DESCRIPTIVE STATISTIC OF VARIABLES IN THE STATISTICAL MODEL

Variables	Very happy (n1 = 73)	Happy (n2 = 293)	Unhappy/very unhappy (n3 = 32)	Total sample (N = 398)
	Percentage or mean (standard deviation)			
Age	37.56 (14.98)	36.40 (13.15)	35.78 (14.58)	36.56 (13.59)
Gender				
Male	41.10 (0.50)	44.71 (0.50)	46.88 (0.51)	44.22 (0.50)
Female	58.90 (0.50)	55.29 (0.50)	53.13 (0.51)	55.78 (0.50)
Ethnicity				
Malay	41.10 (0.50)	38.57 (0.49)	25.00 (0.44)	37.94 (0.49)
Chinese	28.77 (0.46)	43.34 (0.50)	46.88 (0.51)	40.95 (0.50)
Indian/others	30.14 (0.46)	18.09 (0.39)	28.13 (0.46)	21.11 (0.41)
Marital status				
Married	52.05 (0.50)	50.85 (0.50)	34.38 (0.48)	49.75 (0.50)
Single/divorcé/ widow(er)	47.95 (0.50)	49.15 (0.50)	65.63 (0.48)	50.25 (0.50)
Employment status				
Employed	71.23 (0.46)	79.18 (0.41)	78.13 (0.42)	77.64 (0.42)
Unemployed	28.77 (0.46)	20.82 (0.41)	21.88 (0.42)	22.36 (0.42)
Income				
Low	36.99 (0.49)	30.72 (0.46)	34.38 (0.48)	32.16 (0.47)
Lower-middle	41.10 (0.50)	46.42 (0.50)	40.63 (0.50)	44.97 (0.50)
Upper-middle	17.81 (0.39)	18.77 (0.39)	18.75 (0.40)	18.59 (0.39)
High	4.11 (0.20)	4.10 (0.20)	6.25 (0.25)	4.27 (0.20)
Education				
Primary	4.11 (0.20)	5.12 (0.22)	3.13 (0.18)	4.77 (0.21)
Some-high	12.33 (0.33)	8.19 (0.27)	6.25 (0.25)	8.79 (0.28)
High-school	21.92 (0.42)	20.82 (0.41)	28.13 (0.46)	21.61 (0.41)
College	17.81 (0.39)	18.09 (0.39)	12.50 (0.34)	17.59 (0.38)
Bachelor	43.84 (0.50)	47.78 (0.50)	50.00 (0.51)	47.24 (0.50)
Health condition				
Chronic	17.81 (0.39)	16.38 (0.37)	28.13 (0.46)	17.59 (0.38)
No-chronic	82.19 (0.39)	83.62 (0.37)	71.88 (0.46)	82.41 (0.38)

*Note:* For continuous variable, the values refer to mean, whereas for dummy variables, the values refer to percentage.

most liveable cities in Asia that has a very good standard of living (Tan, 2010).

From the sample, the ethnic breakdown consists of 37.94% Malays, 40.95% Chinese and 21.11% Indians/others. Such ethnic composition closely reflects the ethnic structure of the Penang population: 41.60% Malays, 40.90% Chinese and 17.50% Indians/others (SERI, 2010). Besides, the state's gender composition (49.30% males) is also mirrored by the collected sample (44.22% males) (Table 2).

The average age of the total respondents is around 36.56 years. Although only half of the respondents (49.75%) are married, most of them (77.64%) are employed. In terms of the respondents' health status, approximately 17.59% of the entire sample self-report being diagnosed with chronic diseases. Most of the respondents are in the lower-middle income group (44.97%), followed by low (32.16%), upper-middle (18.59%) and high income group (4.27%). Overall, 4.77% of the respondents have primary school or less as their highest academic qualification, 8.79% have some high school, 21.61% have completed high school, 17.59% have attended college, and 47.24% have obtained at least a bachelor's degree.

#### IV. *Empirical Results*

The present study mainly focuses on the marginal effects of “Very happy” and “Unhappy/very unhappy” in order to investigate the effects of several attributes on both happy and unhappy feelings. In the present study, five regression models are estimated (i.e. pooled, males, females, employed and unemployed). Comparing among the regression models, the regression for females has the highest Pseudo-R<sup>2</sup> thus indicating that it is the most fitted model. Using the sample that comprises only “very happy” respondents, a chi-square test for independence of each dummy variable was conducted. The results show that income (high) and education variables have the p-value of  $>0.10$  whereas others have the p-value of  $<0.01$ . Hence, it can be concluded that only income (high) and education are significantly different from their reference groups.

##### 1. **Pooled Sample**

The results for ordered probit analysis of happiness for the pooled sample are presented in Table 3. The results reveal that Chinese have a 7.07% lower probability of feeling very happy as compared to their Indian/others counterparts.

##### 2. **Gender**

The results for ordered probit analysis of happiness by gender are presented in Table 4. The results indicate that no variables are significantly associated with males’ happiness. On the other hand, it is found that Chinese females are 8.77% more likely to feel unhappy or very unhappy as compared to their Indian/others counterparts. Similarly, they also have a 15.57% lower probability of feeling very happy.

##### 3. **Employment Status**

The results for ordered probit analysis of happiness by employment status are presented in Table 5. It is exhibited that employed married individuals have a 4.71% lower probability of feeling unhappy or very unhappy than their single/divorced/widowed counterparts. Likewise, they also have a 8.03% higher likelihood of feeling very happy. With regard to the unemployed sample, income variables are excluded from the model because no income is reported by the unemployed individuals. The results show that unemployed individuals who have some college education are 6.99% less likely to feel unhappy or very unhappy as compared to their peers with only primary education.

TABLE 3. THE RESULTS FOR ORDERED PROBIT ANALYSIS OF HAPPINESS:  
POOLED SAMPLE

Variables	Unhappy/very unhappy	Very happy
Age	0.0038 (0.0051)	-0.0070 (0.0094)
Age <sup>2</sup>	-0.0001 (0.0001)	0.0001 (0.0001)
Gender		
Male	0.0156 (0.0192)	-0.0281 (0.0340)
Female	-	-
Ethnicity		
Malay	-0.0071 (0.0242)	0.0131 (0.0456)
Chinese	0.0411 (0.0264)	-0.0707* (0.0421)
Indian/others	-	-
Marital status		
Married	-0.0287 (0.0233)	0.0524 (0.0424)
Single/divorcé/widow(er)	-	-
Employment status		
Employed	0.0376 (0.0300)	-0.0831 (0.0792)
Unemployed	-	-
Income		
Low	-	-
Lower-middle	-0.0250 (0.0321)	0.0466 (0.0609)
Upper-middle	-0.0295 (0.0331)	0.0639 (0.0843)
High	-0.0270 (0.0451)	0.0625 (0.1320)
Education		
Primary	-	-
Some-high	-0.0267 (0.0417)	0.0599 (0.1147)
High-school	-0.0007 (0.0495)	0.0013 (0.0912)
College	-0.0142 (0.0479)	0.0281 (0.1027)
Bachelor	-0.0020 (0.0532)	0.0036 (0.0975)
Health condition		
Chronic	0.0380 (0.0317)	-0.0578 (0.0401)
No-chronic	-	-
Observations	398	
Pseudo-R <sup>2</sup>	0.0222	

Note: Values refer to marginal effects. The asymptotic standard errors are in parentheses. Asterisk \* indicates significance at the 10% level.

TABLE 4. THE RESULTS FOR ORDERED PROBIT ANALYSIS OF HAPPINESS BY GENDER

Variables	Males		Females	
	Unhappy/very unhappy	Very happy	Unhappy/very unhappy	Very happy
Age	0.0052 (0.0086)	-0.0087 (0.0142)	0.0031 (0.0062)	-0.0064 (0.0127)
Age <sup>2</sup>	-0.0001 (0.0001)	0.0001 (0.0002)	-0.0001 (0.0001)	0.0001 (0.0001)
Ethnicity				
Malay	-0.0180 (0.0350)	0.0316 (0.0643)	0.0068 (0.0330)	-0.0137 (0.0657)
Chinese	-0.0277 (0.0354)	0.0486 (0.0645)	0.0877** (0.0402)	-0.1557*** (0.0593)
Indian/others	-	-	-	-
Marital status				
Married	-0.0537 (0.0436)	0.0868 (0.0672)	-0.0299 (0.0269)	0.0620 (0.0561)
Single/divorcé /widow(er)	-	-	-	-
Employment status				
Employed	0.0324 (0.0560)	-0.0644 (0.1323)	0.0315 (0.0350)	-0.0755 (0.0971)
Unemployed	-	-	-	-
Income				
Low	-	-	-	-
Lower-middle	-0.0422 (0.0529)	0.0762 (0.1022)	-0.0159 (0.0389)	0.0324 (0.0791)
Upper-middle	-0.0118 (0.0635)	0.0207 (0.1168)	-0.0340 (0.0363)	0.0914 (0.1269)
High	-0.0086 (0.0813)	0.0154 (0.1532)	-0.0342 (0.0734)	0.1042 (0.3388)
Education				
Primary	-	-	-	-
Some-high	-0.0584 (0.0494)	0.1550 (0.2054)	0.0057 (0.0691)	-0.0111 (0.1291)
High-school	-0.0265 (0.0718)	0.0506 (0.1560)	0.0022 (0.0594)	-0.0044 (0.1185)
College	-0.0259 (0.0753)	0.0496 (0.1646)	-0.0171 (0.0552)	0.0391 (0.1420)
Bachelor	-0.0522 (0.0869)	0.0916 (0.1585)	-0.0016 (0.0649)	0.0033 (0.1326)
Health condition				
Chronic	0.0500 (0.0489)	-0.0677 (0.0535)	0.0334 (0.0420)	-0.0560 (0.0581)
No-chronic	-	-	-	-
Observations	176		222	
Pseudo-R <sup>2</sup>	0.0229		0.0502	

Note: Values refer to marginal effects. The asymptotic standard errors are in parentheses. Asterisks \*\*\* indicate significance at the 1% level and \*\* at the 5% level.

TABLE 5. THE RESULTS FOR ORDERED PROBIT ANALYSIS OF HAPPINESS  
BY EMPLOYMENT STATUS

Variables	Employed		Unemployed	
	Unhappy/very unhappy	Very happy	Unhappy/very unhappy	Very happy
Age	0.0092 (0.0077)	-0.0161 (0.0133)	-0.0098 (0.0090)	0.0221 (0.0201)
Age <sup>2</sup>	-0.0001 (0.0001)	0.0002 (0.0002)	0.0001 (0.0001)	-0.0002 (0.0002)
Gender				
Male	0.0157 (0.0229)	-0.0270 (0.0389)	0.0360 (0.0415)	-0.0758 (0.0798)
Female	-	-	-	-
Ethnicity				
Malay	-0.0172 (0.0269)	0.0309 (0.0497)	0.0054 (0.0543)	-0.0120 (0.1182)
Chinese	0.0308 (0.0302)	-0.0510 (0.0470)	0.0333 (0.0475)	-0.0724 (0.0980)
Indian/others	-	-	-	-
Marital status				
Married	-0.0471* (0.0267)	0.0803* (0.0439)	0.0535 (0.0618)	-0.1116 (0.1168)
Single/divorcé /widow(er)	-	-	-	-
Income				
Low	-	-	-	-
Lower-middle	-0.0412 (0.0377)	0.0680 (0.0585)	-	-
Upper-middle	-0.0473 (0.0333)	0.1048 (0.0915)	-	-
High	-0.0480 (0.0343)	0.1364 (0.1588)	-	-
Education				
Primary	-	-	-	-
Some-high	-0.0115 (0.0700)	0.0219 (0.1460)	-0.0118 (0.0669)	0.0289 (0.1758)
High-school	0.0417 (0.0881)	-0.0612 (0.1090)	-0.0272 (0.0564)	0.0744 (0.1861)
College	0.0584 (0.1058)	-0.0772 (0.1062)	-0.0699* (0.0379)	0.2739 (0.2119)
Bachelor	0.0496 (0.0816)	-0.0843 (0.1341)	-0.0443 (0.0768)	0.1025 (0.1786)
Health condition				
Chronic	0.0430 (0.0378)	-0.0596 (0.0417)	0.0225 (0.0559)	-0.0466 (0.1058)
No-chronic	-	-	-	-
Observations	309		89	
Pseudo-R <sup>2</sup>	0.0299		0.0484	

Note: Values refer to marginal effects. The asymptotic standard errors are in parentheses. Asterisk \* indicates significance at the 10% level.

## V. Discussion

Among all the variables, only ethnicity, marital status and education are found to be statistically significant in determining happiness. In corroboration with the studies by Clark and Oswald (1994), Theodossiou (1998), Winkelmann and Winkelmann (1998) and Frank (2005), incomes are found to be not significant in affecting happiness. Hence, it can be concluded that money cannot buy happiness. These outcomes also lend support to the conventional wisdom that people have the ability to adapt to changed circumstances.

With regard to education, there appears to be no significant relationship between an individuals' education background and their level of happiness, except those who are unemployed. Since higher educated individuals often carry more job responsibilities at work, they may live a more stressful and hectic lifestyle. As such, they may not necessary feel happier as compared to their lower educated peers who usually have a lower job position. On the other hand, individuals who are not in the workforce such as students and unemployed individuals do not face such a phenomenon. In fact, higher educated unemployed individuals are likely to possess better self-confidence in job seeking which could, in turn, result in better well-being.

Following the previous findings by Gredtham and Johannesson (2001), Clark and Oswald (2002), Subramanian et al. (2005) and Peiro (2006), employed individuals who are married tend to feel happier than their single/divorced/widowed peers. Perhaps, this is because married individuals often receive more social, mental and economic support from their spouses (Diener et al., 1999).

It is worthwhile to note that Chinese are found to have a lower likelihood of feeling very happy. As suggested by Ng et al. (2009), there are two phenomena that negatively affect the happiness of Malaysian Chinese. First, Malaysian Chinese often face more constraints in economic advancement although they are the biggest taxpayers among all the ethnic groups in Malaysia. Second, as a result of unequal ethnic privileges, Malaysian Chinese are forced to engage in a hectic working lifestyle in order to cope with their high cost of living.

Likewise, it is also found that Malaysian Chinese women tend to have unhappier feelings. This may be due to the existence of gender role inequality and a traditional housewife concept. Malaysian Chinese women are often compelled to spend a lot of time on household activities even though they are employed full-time in the labour market (Ng et al., 2009).

Conforming to the findings by Peiro (2006), no significant relationship is found between employment status and happiness. The explanation may be that, although unemployed individuals face more financial constraints in purchasing goods and services, they tend to spend more time on physical exercise and leisure activity which could bring about better well-being (Frank, 2005). In terms of gender, it is found to have no significant impact on happiness. These findings contradict the studies by Gredtham and Johannesson (2001), Frey and Stutzer (2002) and Subramanian et al. (2005), who claimed that gender can determine one's happiness.

The findings of the present study lend support to the study by Diener et al. (1993), who found that age is not significantly associated with happiness. Likewise, the absence of the effect of  $age^2$  rejects the existence of U-shape and inverted U-shape relationships between age and happiness, which is suggested by Gredtham and Johannesson (2001), Frey and Stutzer (2002)

Peiro (2006) and Howell et al. (2006). This is owing to individuals being able to adjust to the changes of their life over time as they grow older.

## VI. *Conclusion, Policy Implications, Limitations and Direction of Future Research*

The present study has found that only a few socio-demographic factors (ethnicity, marital status, education) are significantly associated with the happiness among Penang adults. Family, culture, lifestyle and job, for instance, are all playing the important roles in determining happiness. Based on these findings, several measures toward improving the populations' well-being are recommended.

The latest statistic shows that the employment rate of Penang is 97.8%, indicating that the majority of the individual's income comprises labour income (Department of Statistics Malaysia, 2011). In light of the finding that more income does not necessarily bring more happiness, it is suggested that the government directly focus on improving the population's happiness instead of only providing more financial support to the population. For instance, more public holidays for the workforce should be officialised to allow people to have more free time to enjoy leisure activities.

Considering the impact of education on happiness, the policy that pays particular attention on improving the populations' educational attainment alone may not work well in maximising happiness. In fact, one should also come out with practicable ideas of reducing the stresses that are faced by those highly educated individuals as they often suffer from job pressures. For example, various health campaigns could be conducted frequently in the workplace to educate the people on how to relax given a hectic lifestyle.

Last but not least, since the population's well-being can be improved through marriage, policymakers that focus on promoting marriage to the community may yield promising results. This is because individuals with spouses are likely to receive greater social, mental and economic support as compared to those without spouses. As a suggestion, the government can organise more marriage campaigns such as workshops and seminars to the public with specific attention on highlighting the benefits of getting married. In particular, efforts can be made to invite the spokespersons from various ethnic groups (Malay, Chinese, Indian/others) or utilise several types of language-based mass media such as newspapers, magazines, television and radio to deliver the messages regarding marriage.

Given the budget and time constraints, several intrinsic limitations are acknowledged. First, the collected sample size is somewhat small and limited, thus it is unable to reflect the country's population as a whole. Second, the individual's lifestyle related variables such as smoking, drinking and physical exercise are excluded. Therefore, with finance, time and resources availability, suggested future researches should have the samples to be collected in all the states in Malaysia as well as to extend the model to include more relevant variables.

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